

Work Order ID 145585

Friday, May 06, 2016 9:12:23 AM

145585

Page 1

Item ID: D4062-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Tank Support Assembly
Start Date: 4/25/2016 Start Qty: 8.00 ***8*** Cust Item ID:
Required Date: 5/5/2016 Req'd Qty: 8.00 ***8*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D4062	E
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100

0.00

100

Waterjet

Memo

4.16

FLOW CNC Waterjet

CUT BLANK AS PER FILE D4062-1_BLANK

10	0	16/07/08
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102

QC2- Inspect parts off machine FAI/FAIB

0.00

102

QC

Memo

0.08

Quality Control

10	0	16/07/08
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105

2.40

105

HAAS 1

Memo

2.80

HAAS CNC vertical machine #1

MILL AS PER DWG AND FOLIO FA949

DWG REV: FFOLIO REV: AA

10	0	16/08/05
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DAS
33
9-89
DAS
14
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE ...

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

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Page 2

Item ID: D4062-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Tank Support Assembly

Start Date: 4/25/2016 Start Qty: 8.00

8

Cust Item ID:

Required Date: 5/5/2016 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
106	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS 33 9-89
106						10	0		16/08/05
QC	Memo	0.08							
Quality Control									
130	QC8- Inspect parts - second check	0.00							DAS 08 9-89
130						10	0		
QC	Memo	0.16							
Quality Control									
140	Identify as per dwg & Stock Location: _____	0.00							
140									
Packaging	Memo	0.08							
Packaging	LOCATION: WA003								

DAS
6
9-89Cont
10
R

AUG 15 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
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							Lead hand / Supervisor Approval Verification		
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Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER :			
Misidentified ☐	☐	Past Due	☐				

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Page 3

Item ID: D4062-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Tank Support Assembly
Start Date: 4/25/2016 Start Qty: 8.00 ***8*** Cust Item ID:
Required Date: 5/5/2016 Req'd Qty: 8.00 ***8*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.80							
Quality Control									

DAS
21
9-89
AUG 16 2016

DAS
21
9-89
AUG 16 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Friday, May 06, 2016 9:12:23 AM

Page 1

Work Order ID: 145585

145585

Parent Item: D4062-041

D4062-041

Parent Item Name: Tank Support Assembly

Start Date: 4/25/2016

Required Date: 5/5/2016

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP REV:A NEW ISSUE 11-11-23 JLM VERIFIED BY:DD IPP
REV:B AS PER REV C 12-03-08 JLM VERIFIED BY:DD IPP REV:C
AS PER REV D 13-07-16 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB1.250		Purchased		No			sf	124.0000		30.69474			

MUHMWB1 250

UHMWB 1.250 BLACK

2016/07/08

Location

Loc Qty

Loc Code

MAT019

124

m127198

124

40

DQA: _____ Date: _____

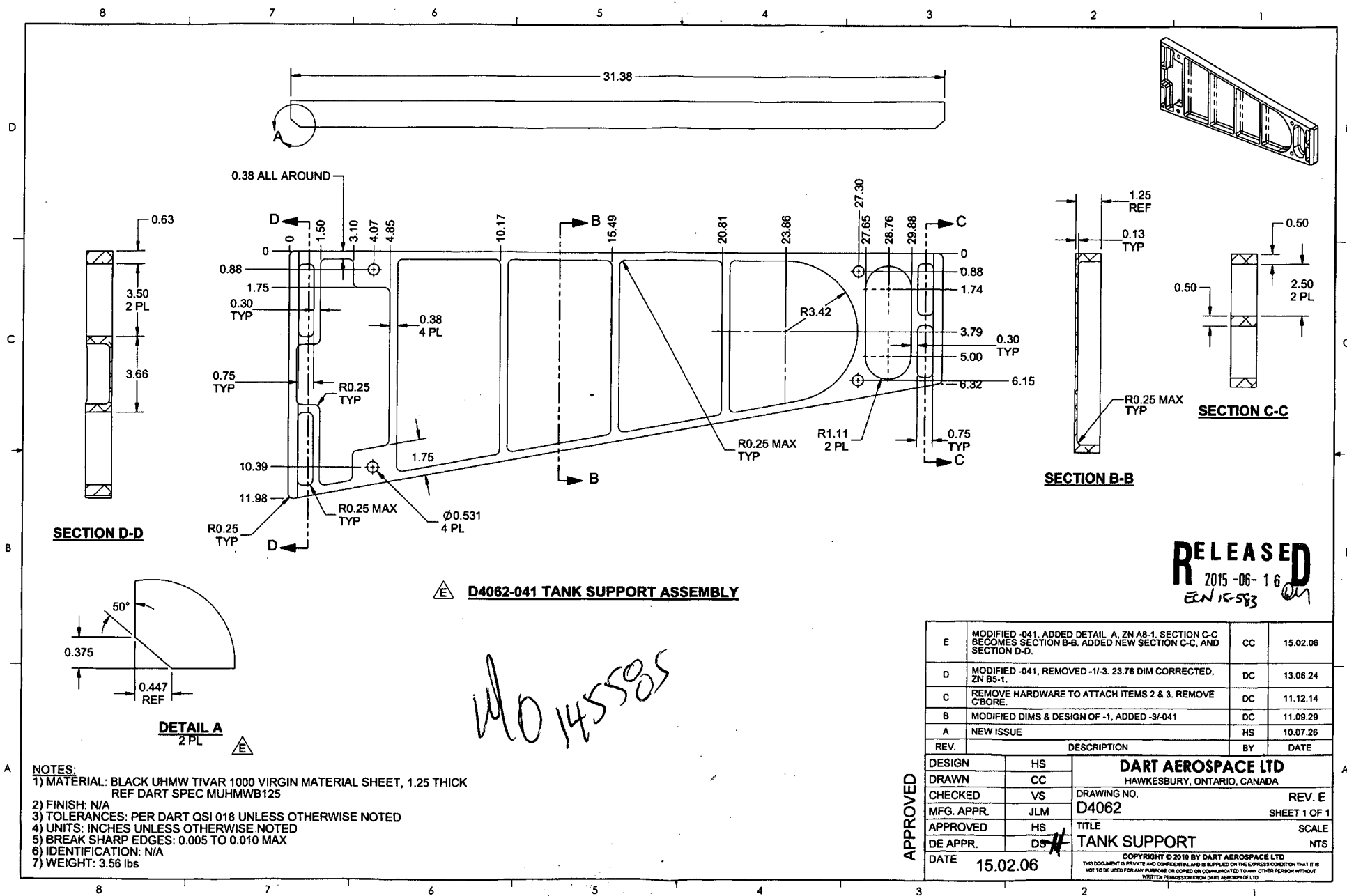


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : _____							



D4062-041 TANK SUPPORT ASSEMBLY

RELEASED
2015-06-16
EEN 15-583

REV.	DESCRIPTION	BY	DATE
E	MODIFIED -041. ADDED DETAIL A, ZN A8-1. SECTION C-C BECOMES SECTION B-B. ADDED NEW SECTION C-C, AND SECTION D-D.	CC	15.02.06
D	MODIFIED -041, REMOVED -1/-3. 23.76 DIM CORRECTED, ZN B5-1.	DC	13.06.24
C	REMOVE HARDWARE TO ATTACH ITEMS 2 & 3. REMOVE C-BORE.	DC	11.12.14
B	MODIFIED DIMS & DESIGN OF -1, ADDED -3/-041	DC	11.09.29
A	NEW ISSUE	HS	10.07.26
DESIGN	HS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D4062 TANK SUPPORT COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	
DRAWN	CC		
CHECKED	VS		
MFG. APPR.	JLM		
APPROVED	HS		
DE APPR.	DS	REV. E	SHEET 1 OF 1
DATE	15.02.06	SCALE	NTS

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By _____	
								Lead hand / Supervisor Approval Verification _____	
								QC / QA Coordinator Approval _____	

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____ _____			
Misidentified ☐	☐	Past Due ☐	☐				

DART AEROSPACE LTD		Work Order:	145585
Description: Tank Support Assembly		Part Number:	D4062-041
Inspection Dwg: D4062 Rev: E		Page 1 of 1	

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
31.38	+/-0.030	31,380	✓		MIP-07	Tape
0.63	+/-0.030	0,618	✓		MJP-04	vern
3.50	+/-0.030	3,494	✓			
3.66	+/-0.030	3,653	✓			
11.98	+/-0.030	11,980	✓			
1.50	+/-0.030	1,500	✓			
3.10	+/-0.030	3,092	✓			
4.85	+/-0.030	4,843	✓			
10.17	+/-0.030	10,170	✓			
15.49	+/-0.030	15,490	✓			
20.81	+/-0.030	20,810	✓			
27.65	+/-0.030	27,650	✓			
29.88	+/-0.030	29,880	✓			
0.75	+/-0.030	0,750	✓			
0.38	+/-0.030	0,380	✓			
1.75	+/-0.030	1,750	✓			
1.75	+/-0.030	1,750	✓			
Ø0.531	+0.008/-0.001	0,531	✓			
0.88	+/-0.030	0,877	✓			
4.07	+/-0.030	4,070	✓			
27.30	+/-0.030	27,300	✓			
10.39	+/-0.030	10,390	✓			
6.15	+/-0.030	6,150	✓			
R1.11	+/-0.030	1,110	✓			
R0.250	+/-0.010	0,250	✓			
R0.250	+/-0.010	0,250	✓			
1.25	+/-0.030	1,260	✓			
0.13	+/-0.030	0,157	✓			
0.50	+/-0.030	0,500	✓			
0.50	+/-0.030	0,500	✓			
2.50	+/-0.030	2,500	✓			
0.375 x 50°	+/-0.010 x +/-0.5°	0,385 x 50°	✓			

Measured by: 33	Checked by: B. DAS	QC Inspector:
Date: 16/08/05	Date: 16/08/10	Date:

Engineering Approval: (If necessary)	Date:
--	--------------

Rev	Date	Change	Revised by	Approved
A	15.09.23	New Issue	KJ	AA

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
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Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
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